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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/543,005	07/22/2005	Shuichi Watanabe	1907-0227PUS1	2443

2292 7590 03/18/2008
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EXAMINER	
ABRAHAM, ESAW T	

ART UNIT	PAPER NUMBER
2112	

NOTIFICATION DATE	DELIVERY MODE
03/18/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/543,005	WATANABE ET AL.	
	Examiner	Art Unit	
	ESAW T. ABRAHAM	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01/16/08*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *30-33,36-40,43-49,51-57 and 59-63* is/are pending in the application.

4a) Of the above claim(s) *34-35, 41042, 50 and 58* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30-33,36-40,43-49,51-57 and 59-63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 July 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/22/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to the Applicant's remark

1. Applicant's arguments, with respect to the restriction requirement made on 10/16/07 have been fully considered and are persuasive. Therefore, Group 1A, claims 30-33, 36-40, 43-49, 51-57 and 60-63 are presented for examination as the Applicant's request. Applicants are requested to cancel non-elected claims 34-35, 41-42, 50 and 58 in subsequent communication.

Oath Declaration

2. The oath/declaration filed on 07/22/05 is acceptable.

Information Disclosure Statement

3. The Information Disclosure Statements filed on 07/22/05 have been considered.

Priority

4. Acknowledgment is made of applicant's claim for **foreign priority** under 35 U.S.C. 119(a)-(d) which papers have been placed of record in the file.

Drawings

5. The drawings filed on 07/22/05 are objected to because:

- Figures 26-30 should be designated by a legend such as – **prior art** - (see page 5, lines 10-11) in order to clarify what is applicant's invention.

A proposed drawing correction or corrected drawings are required in reply to the office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Corrected drawings sheets in compliance with 37 CFR 1.121(d) are required in reply to the office action should include all the figures appearing on the immediate prior version of the

sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be cancelled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheet may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header so as not to obstruct any portion of the drawing figures. If the changes are not acceptable by the examiner, the applicant will be notified and informed of any required corrective action in the next office action. The objection to the drawings will not be held in abeyance.

Specification

Abstract

6. Applicant is reminded of the proper language and format for an abstract of the disclosure. See MPEP 608.01(b).

> The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

- The abstract is objected because: the abstract should not include claim language such as **"comprises"** (see line 4 of the Abstract). Further, in the content of the Abstract the reference number "101" should be deleted or removed from the content of the Abstract since the number of the figure is not specified or indicated.

  Appropriate correction is required.

Claim Objections

7. Claims 30, 31 and 44 are objected to because of the following informalities:

   - Claim 30, Please change "rearranging unit" to ---a rearranging unit---.

   - Claim 30, Please change "determining unit" to ---a determining unit---.

   - Claim 30, Please change "encoding unit" to ---an encoding unit---.

   - Claim 31, Please change "determining unit" to ---a determining unit---.

   - Claim 31, Please change "encoding unit" to ---an encoding unit---.

   - Claim 44, Please change "storage unit" to ---a storage unit---.

   - Claim 44, Please change "determining unit" to ---a determining unit---.

   - Claim 44, Please change "decoding unit" to ---a decoding unit---.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims **60-63** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non- statutory subject matter.

Claims **60-63** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because:

Claims 60-63 fail to fall within the statutory category of invention. The Claims are directed to the program themselves, not a process (method) occurring as a result of executing the program, a machine programmed to operate in accordance with the program not a manufacture structurally and functionally interconnected with the program in a manner which enables the program to act as a computer component and realize its functionality. They are also clearly not directed to a composition of matter. Therefore the claims are non-statutory under 35 USC 101.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere* CO., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims **30-33, 36-40, 43, 45-49, 51, 53-57,** rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted prior art in view of Murashita et al. (U.S. PN: 5,907,637) (hereinafter "Murashita")

As per claims 30 and 37:

Applicant's Admitted prior art substantially teaches or discloses an encoding device and an encoding method for encoding a plurality of pieces of position information corresponding to a plurality of leaves and/or nodes at the same layer in a tree structure (see figure 27 and Applicant's disclosure page 4, lines 16-19), comprising, determining unit for determining, in accordance with the predetermined order relationship, a branch layer of two consecutive pieces of position information from among the plurality of pieces of position information output from the rearranging unit (see figure 27 element 2704 and Applicant's disclosure page 6, lines 20-23), and encoding unit for outputting a code corresponding to the branch layer (see figure 27 element 2702 and Applicant's disclosure page 6, lines 11-19).

Applicant's Admitted prior art does not explicitly teach a rearranging unit and rearranging step for rearranging, in accordance with a predetermined order relationship, the plurality of pieces of position information to be encoded.

However, Murashita in an analogous art disclosed a data compressing unit (encoder) compresses input data by encoding the encoding the input data according to a history of occurrence of the input data occurring in the past (see col. 33, lines 6-10). Murashita further teaches that the compressing unit comprises a code tree rearranging means (see figure 1 element 105) for exchanging an encoding leaf with another leaf or an internal code and further coupled to

a code tree determining means (see figure 1 element 103 for outputting a unique data (see col. 5, lines 29-32 and col. 33 lines 23-34).

Therefore, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to incorporate a rearranging unit for rearranging plurality of pieces of position information in the Applicant's admitted prior art's encoding device as suggested by Murashita .

This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by incorporating a rearranging unit within an encoding device would have improve the encoding performance of the encoding device.

As per claims 31 and 38:

Applicant's Admitted prior art substantially teaches or discloses an encoding device and an encoding method for encoding a plurality of pieces of position information corresponding to a plurality of leaves and/or nodes at the same layer in a tree structure (see figure 27 and Applicant's disclosure page 4, lines 16-19), comprising, determining unit for determining, in accordance with the predetermined order relationship, a branch layer of two consecutive pieces of position information from among the plurality of pieces of position information output from the rearranging unit (see figure 27 element 2704 and Applicant's disclosure page 6, lines 20-23), and encoding unit for outputting a code corresponding to the branch layer (see figure 27 element 2702 and Applicant's disclosure page 6, lines 11-19).

Applicant's admitted prior art does not explicitly teach plurality of pieces of position information to be encoded being arranged in accordance with a predetermined order relationship.

However, Murashita in an analogous art disclosed a data compressing unit (encoder) compresses input data by encoding the encoding the input data according to a history of occurrence of the input data occurring in the past (see col. 33, lines 6-10). Murashita further teaches that the compressing unit comprises a code tree rearranging means (see figure 1 element 105) for exchanging an encoding leaf with another leaf or an internal code and further coupled to a code tree determining means (see figure 1 element 103 for outputting a unique data (see col. 33, lines 23-34).

Therefore, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to incorporate a rearranging unit for rearranging plurality of pieces of position information in the Applicant's admitted prior art's encoding device as suggested by Murashita .

This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by incorporating a rearranging unit within an encoding device would have improve the encoding performance of the encoding device.

As per claims 32 and 33:

Murashita substantially teaches, in view of above rejections, encoding a input data according to a history of occurrence of the input data in the past comprising collecting the character strings of said input data, numbering them, and entering them in a dictionary, corresponding a code to each of the character strings, encoding and updating the code corresponding to a dictionary number of a longest coinciding character string, entering an elongated character string of said character string to be encoded until said elongated character

string reaches a predetermined maximum character string length, entering a code corresponding to said elongated character string (see col. 4, lines 52-64).

As per claim 36:

Murashita substantially teaches or disclose wherein the tree structure represents search information, and wherein the leaves or nodes corresponding to the plurality of pieces of position information to be encoded correspond to elements of the same type contained in the search information (see col. 13, lines 30-50).

As per claims 39 and 40:

Murashita substantially teaches or disclose wherein the plurality of pieces of position information are rational number position information represented by a rational number, and wherein the predetermined order relationship is determined by the order of magnitude of resolution of the rational number (see col. 8, lines 37-40).

As per claim 43:

Murashita substantially teaches or disclose wherein the tree structure represents search information, and wherein the leaves or nodes corresponding to the plurality of pieces of position information to be encoded correspond to elements of the same type contained in the search information (see col. 13, lines 30-50).

As per claims 45 and 53:

Applicants' admitted prior art substantially teach or disclose all the subject matter claimed in claims 44 and 52. Applicants' admitted prior art do not explicitly teach rearranging unit and rearranging step for rearranging the plurality of pieces of decoded position information in accordance with the order of magnitude.

However, Murashita in an analogous art disclosed a data decompressing unit (decoder) decompresses decodes an encoded code having been encoded according to a history of data occurred in the past (see col. 10, lines 38-64, col. 38, lines 7-11 and figure 5). Murashita further teaches that the decompressing unit comprises a code tree rearranging unit for exchanging a decoded leaf or another leaf or another internal code (see figure 5 element 205 and col. 38, lines 31-32).

Therefore, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to incorporate a rearranging unit for rearranging pieces of decoding position information in the Applicant's admitted prior art's encoding device as suggested by Murashita .

This modification would have been obvious to one of ordinary skill in the art because one of ordinary skill in the art would have recognized that by incorporating a rearranging unit within an encoding device would have improve the encoding performance of the encoding device.

As per claim 46-49:

Murashita substantially teaches, in view of above rejections, encoding a input data according to a history of occurrence of the input data in the past comprising collecting the character strings of said input data, numbering them, and entering them in a dictionary, corresponding a code to each of the character strings, encoding and updating the code

corresponding to a dictionary number of a longest coinciding character string, entering an elongated character string of said character string to be encoded until said elongated character string reaches a predetermined maximum character string length, entering a code corresponding to said elongated character string (see col. 4, lines 52-64)

As per claim 51:

Murashita substantially teaches, in view of above rejections, wherein the tree structure represents search information, and wherein the leaves or nodes corresponding to the position information to be decoded correspond to elements of the same type contained in the search information (see col. 13, lines 30-46).

As per claim 54-57:

Murashita substantially teaches, in view of above rejections, a data decompressing method for decompressing encoded data obtained by encoding input data according to a history of the input data in the past, comprising performing context collecting step for collecting character strings of decoded data, performing a coding step for generating and updating a code tree while rearranging the code tree according to said character strings of the decoded data obtained at said context collecting step. Further, Murashita teaches decompressing encoded data obtained by encoding input data according to a history of the input data in the past, comprising collecting character strings of decoded data, numbering them, and entering them in a dictionary, and corresponding a code to each of the character strings of said decoded data, decoding a character string corresponding to a dictionary number as a code and updating it, entering an elongated character string of said encoded character string until said elongated character string

reaches a predetermined maximum character string length, entering a code corresponding to said elongated character string (see col. 4 last paragraph and col. 5, lines 5-15).

As per claim 59:

Murashita substantially teaches, in view of above rejections, wherein the tree structure represents search information, and wherein the leaves or nodes corresponding to the position information to be decoded correspond to elements of the same type contained in the search information (see col. 14, lines 41-51).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S. C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims **44 and 52** are rejected under 35 U.S.C. **102(b)** as being clearly anticipated by Applicant's Admitted prior art.

As per claims 44 and 52:

Applicant's Admitted prior art substantially teaches or discloses a decoding device and a decoding method for decoding a string of position information code composed of a plurality of pieces of encoded position information corresponding to a plurality of leaves and/or nodes at the same layer in a tree structure (see figure 30 and page 8 lines 9-12), comprising storage unit for successively storing decoded position information (see figure 30 element 3002 and page 8 lines 15-17), determining unit for determining a branch layer of two consecutive pieces of position

information based on the position information code (see figure 30 element 3003 and page 8 lines 17-22), and decoding unit for updating the value of the position information, stored in the storage unit, corresponding to the branch layer by one notch in accordance with a predetermined order relationship. (see figure 30 element 3004 and page 8 lines 22-26).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Esaw T. Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8am-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Esaw T Abraham/

Examiner, Art Unit 2112